

JUL 08 2008

REMARKS

In response to the Official Action mailed on April 8, 2008, the application has been amended. No new matter has been added. Reconsideration of the rejections of the claims is respectfully requested in view of the above amendments and the following remarks.

In paragraph 2 of the Official Action, claims 1 and 3 were rejected under 35 USC 102(b) as anticipated by Cook (U.S. Patent No. 5,524,699). This rejection is respectfully traversed.

Amended claim 1 describes a hand-held metal pouring apparatus including a portable reservoir and an elongated handle by which a worker can hold the reservoir to pour molten metal into a mold. Amended claim 1 is supported by page 4 of the application as filed, which discloses that the reservoir has a size such that it can be easily lifted and manipulated by a worker, and by page 6, which discloses an elongated handle. Cook does not disclose or suggest such an arrangement.

Cook discloses a system for producing a composite material including a mixing device having a stirring mechanism disposed in a mixing container for mixing a liquid metal and a reinforcement material. There is no disclosure in Cook that the mixing device is capable of being used as a hand-held device nor any suggestion of making it into a hand-held device. On the contrary, it is clear that the mixing device of Cook is intended to be installed in a fixed location. The mixing device is also not equipped with

an elongated handle like the apparatus set forth in claim 1. Paragraph 5 of the Official Action stated that it would have been obvious to have provided the mixing container of Cook with a handle to facilitate operation, since the prior art (such as JP 55-23256 and JP 59-143566) show ladles or scoops equipped with a handle. However, the mixing device of Cook is not a hand-held device and is not intended to be used as a hand-held device. It is also not a ladle or a scoop, so the fact that there exist ladles and scoops which have handles provides no suggestion to equip the mixing device of Cook with a handle.

Accordingly, as Cook does not teach or suggest all the features set forth in amended claim 1, it cannot anticipate this claim or render it obvious. Claim 1 is therefore allowable.

In paragraph 3 of the Official Action, claim 8 was rejected under 35 USC 102(b) as anticipated by JP 6-31486. This rejection is respectfully traversed.

Amended claim 8, which now depends from claim 1, described a method of casing a solder product using the hand-held molten metal pouring apparatus of claim 1. The method includes stirring metal particles and molten solder with the stirrer of the molten metal pouring apparatus of claim 1. Amended claim 8 is supported by pages 6 and 7 of the application as filed, which describe a method of casing a solder product using a molten metal pouring apparatus.

JP 6-31486 discloses a method which includes pouring metal particles a1 into molten solder c' and stirring the mixture by

hand to obtain a mother material d' for molding an ingot. The mother material d' is then cast into a suitable mold and cooled to form an ingot d. The method disclosed in JP 6-31486 thus corresponds to the conventional method described on page 2 of the present application in which a mixture of molten solder and metal particles is stirred by hand with a metal spatula, scooped from a melting pot with a ladle, and then cast into a mold. The method employed in JP 6-31486 thus has the same problems as the conventional method described on page 2, such as that it is difficult to control the size of the metal particles al because a significant time may elapse between when the metal particles are mixed with molten solder and when the mixture is cast into a mold.

In contrast, since the method described by claim 8 employs a molten metal pouring apparatus according to claim 1, mixing of molten solder and metal particles can take place inside the very reservoir used to cast the mixture into a mold and can take place immediately before the mixture is cast into a mold. Therefore, the problem of a decrease in the size of or a variation in the size of the metal particles which occurs with conventional methods of preparing a mixture of metal particles and molten solder can be avoided.

Thus, as JP 6-31486 does not disclose a method of casting molten solder using the pouring apparatus of claim 1, it does not include all the steps in the method of claim 8 and so cannot anticipate this claim. Claim 8 is therefore allowable.

In paragraph 5 of the Official Action, claims 2 and 7 were rejected under 35 USC 103(a) as unpatentable over Cook. These claims have been cancelled, so the rejections thereof are now moot.

In paragraph 6 of the Official Action, claims 4 - 6 were rejected under 35 USC 103(a) as unpatentable over Cook in view of Rigdon et al (U.S. Patent No. 6,225,503, referred to below as Rigdon). This rejection is respectfully traversed.

Amended claim 4 states that the rotational drive mechanism of claim 1 comprises an air motor having an exhaust port communicating with the interior of the reservoir. Amended claim 4 is supported by claim 5 as filed and by pages 5 and 7 of the application as filed. The cited references do not disclose or suggest such an arrangement.

The Official Action is correct in stating that it is known from Rigdon to use an air motor for stirring a liquid (Rigdon uses an air motor drive 38 to stir a cold water and crash precipitate solution 42). The Official Action is also correct in stating that it is known to provide an inactive atmosphere in a container for a molten metal. However, it does not follow, as asserted by the Official Action, that it would be obvious to exhaust gas from an air motor into a reservoir to create a gas atmosphere.

Rigdon merely discloses in column 3, lines 55 - 56 a slurry reactor 34 provided with an air drive motor 38 for stirring solution 42. It contains no disclosure concerning how the air

drive motor 38 is connected to a source of air and no suggestion of using exhaust from the air drive motor 38 for any purpose. In Cook, gas may be supplied to the interior of a mixing device via a control valve 37. There is no teaching or suggestion in Cook of using exhaust from an air motor to create an atmosphere in a reservoir. Thus, the references do not contain teachings that could be combined to result in an arrangement having all the features set forth in claim 4.

Page 3 of the Official Action states that "to use an air motor powered by inert gas and use the exhaust to provide an inert atmosphere in lieu of providing a separate inlet for the inert gas presents no novel or unexpected result and solve no stated problem and would have been obvious to those of ordinary skill in the casting art" and relies upon In re Kuhle for support. Since the Official Action does not give a complete citation for In re Kuhle, it is not clear what portion of that case or exactly how the Official Action wishes to rely upon that case. MPEP 2144.04 II A relies upon In re Kuhle for the proposition that "omission of an element and its function is obvious if the function of the element is not desired". That proposition, however, does not appear to be relevant to the claims in question, for the claims do not involve omitting an element and omitting its function. On the contrary, by the Examiner's own description on page 3 of the Official Action, communicating an exhaust port of an air motor to the interior of a reservoir makes it unnecessary to provide a separate inlet for gas. As such, the arrangement set forth in claim 4 eliminates

the need for an element (a separate inlet) while retaining the function of the inlet (supplying gas to the interior of a reservoir). As set forth in MPEP 2144.04, "Note that the omission of an element and retention of its function is an indicia of unobviousness. *In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966)". The arrangement set forth in amended claim 4 provides a very useful result which is not suggested by or predictable from the cited references. Claim 4 is therefore allowable.

Claim 5 has been rewritten as an independent claim without any change in scope. Claim 5 describes a molten metal pouring apparatus having an air motor drivingly connected to a stirrer and a gas supply line communicating between an exhaust port of the air motor and the interior of a reservoir. As discussed above with respect to claim 4, there is no teaching or suggestion in the cited references of supplying exhaust gas from an air motor to the interior of a reservoir. As such, the references cannot render claim 5 obvious. Claim 5 and claim 6 which depends from claim 5 are therefore allowable.

In paragraph 7 of the Official Action, claim 9 was rejected under 35 USC 103(a) as unpatentable over JP 6-31486. Claim 9 has been cancelled, so its rejection is now moot.

In paragraph 8 of the Official Action, claim 10 was rejected under 35 USC 103(a) as unpatentable over JP 6-31486 in view of

Cook and Rigdon. This rejection is respectfully traversed.

Claim 10 has been amended so as to match the language in amended claim 8, from which claim 10 depends. As before, claim 10 includes supplying a gas to an inlet of an air motor and then supplying gas discharged from an exhaust port of the air motor to the interior of a reservoir. The Official Action asserts that there is inherently nothing patentable in supplying gas from an exhaust port to the interior of a reservoir. However, as discussed above with respect to claims 4 and 5, neither Cook nor Rigdon discloses or suggests exhausting an air motor into a reservoir, and as such, there are no teachings which a person skilled in the art could rely upon to modify these references to result in a method having all the steps set forth in claim 10. As such, the references cannot render claim 10 obvious. Claim 10 is therefore allowable.

New claims 11 - 13 describe additional features of the present invention. These claims are allowable as depending from claim 10, claim 5, and claim 1, respectively.

In light of the foregoing remarks, it is believed that the present application is in condition for allowance. Favorable consideration is respectfully requested.

Respectfully submitted,



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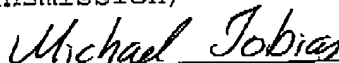
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